

Public Health Contrasts in Hawaii, 1850–1953

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HAWAII is often described as the paradise of the Pacific. It is a healthy paradise as well—in climate and culture. Hawaii's communicable disease rates are the lowest in the world. As examples, there has not been a single case of smallpox contracted locally since 1913; not a single death from diphtheria since 1946, from scarlet fever since 1942, nor from typhoid fever since 1947, and not a single case of typhoid fever since 1949.

Hawaii's infant mortality rate for fiscal year 1953 was 21 per 1,000 live births; the maternal mortality rate was 3.1 per 10,000; and the tuberculosis mortality rate was 10.88 per 100,000. The reduction in Hawaii's tuberculosis mortality, as shown in figure 1, exemplifies the progress made in the control of this important health problem. Decline in mortality from diphtheria, tetanus, typhoid and paratyphoid fever, and pertussis is graphically shown in the four charts in figure 2. Hawaii has no rabies and no anopheles mosquitoes.

Dr. Lee, president and also chief executive officer, Hawaii Board of Health, was formerly director of public health for the Territory, from 1943 to May of 1953, and also deputy territorial commissioner of public health for the islands, from 1936 to 1943. A graduate of Tulane Medical School, where he was an instructor in gross anatomy from 1933–35, Dr. Lee received his doctorate in public health at Yale in 1938. He has lectured in public health administration and preventive medicine at the University of Hawaii since 1937.

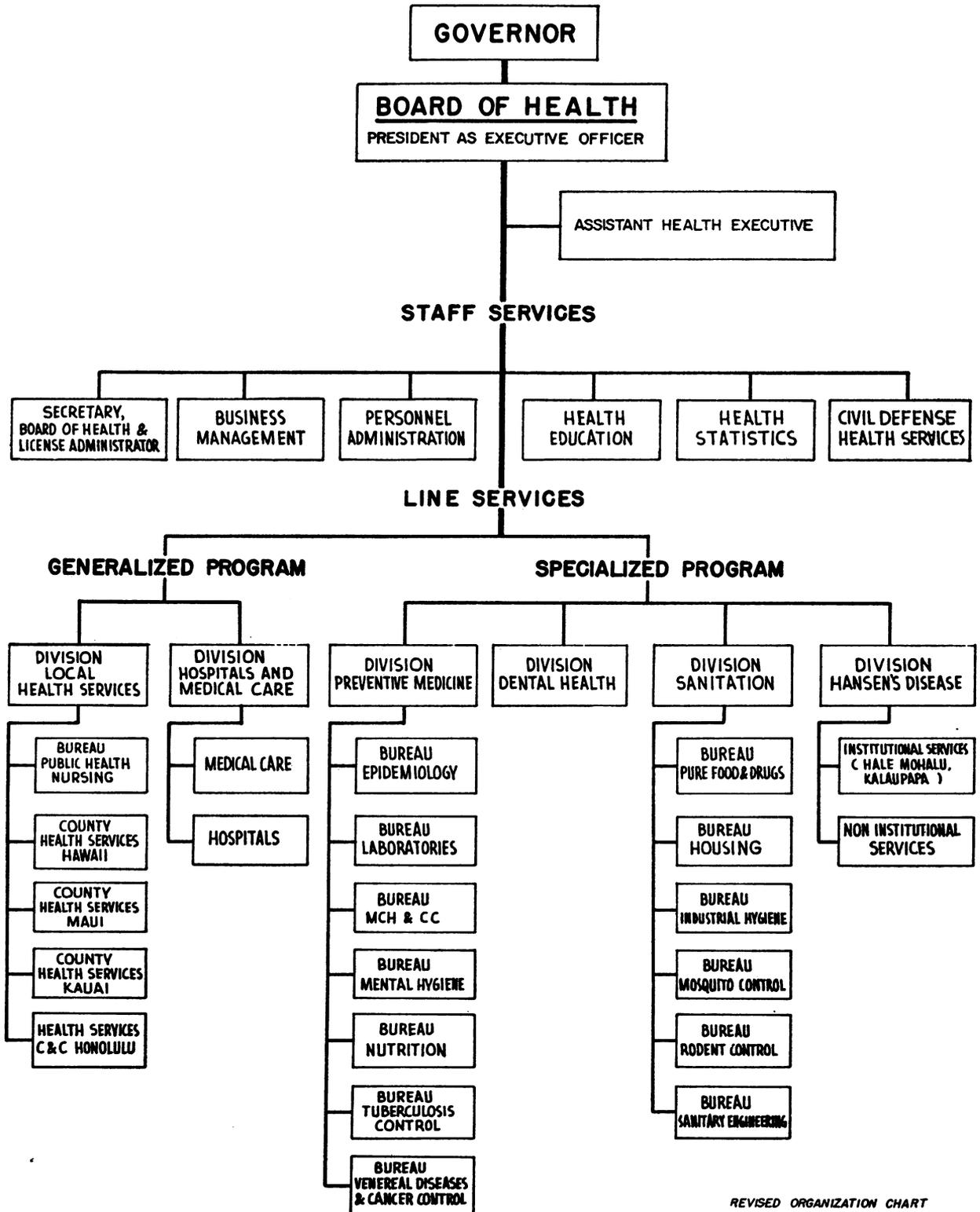
These facts are only a part of the public health picture in Hawaii in 1953. More than a hundred years ago, public health in Hawaii was a story of an insular community inhabited by Polynesian people who came from the South Pacific. They had lived in undisturbed isolation and were well adapted to the diseases which they brought with them. These native people multiplied so that when Captain James Cook discovered the Sandwich Islands in 1778, he estimated a population of 300,000 Hawaiians. But by 1850 the population had dropped to 75,000.

During the 100 years following Cook's discovery, Hawaii became the port of call for the whalers, the traders in sandalwood, furs, silks, and for all kinds of shipping, and the native people were exposed to new people and new diseases. Epidemics of communicable diseases such as smallpox, cholera, influenza, measles, venereal diseases, leprosy, and plague decimated the native population. Even such diseases as mumps and whooping cough killed both young and old. The epidemic of smallpox in 1853 was so severe that of a population of 19,126 persons on the Island of Oahu, 9,082 cases and 5,748 deaths were reported.

A Century of Progress

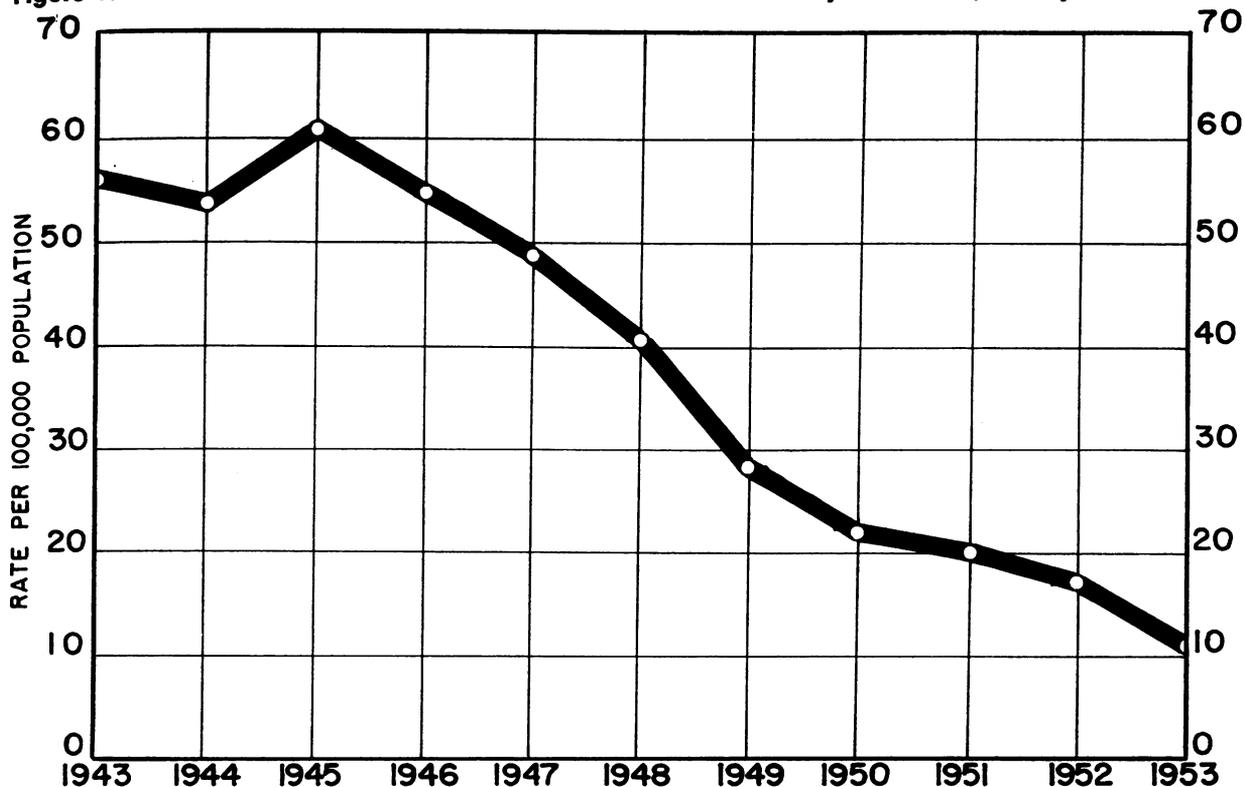
A century of public health progress since 1850 reveals a story of continued epidemics of diseases with more positive public health measures being undertaken, especially during the past half century. In that year King Kamehameha III and his privy council established

1953 organization chart of Territory of Hawaii Department of Health



REVISED ORGANIZATION CHART
ADOPTED OCTOBER 22,
1953

Figure 1. Death rates from all forms of tuberculosis in the Territory of Hawaii, fiscal years 1943-53.



the first board of health in the Kingdom of Hawaii in order "to provide for the preservation and cure of contagious, epidemic or other diseases" and to enforce sanitary measures (1).

In 1850, maintaining potable water supplies was a sanitation problem because water used was all surface water. Today, Honolulu and the Territory have an excellent water service through actions of independent boards of water supply.

In 1854, vaccination of the population was made mandatory by the legislature. This requirement is still in effect today and is applicable not only to the local population but also to island visitors.

In 1865, Kalaupapa Settlement for leprosy patients was established. Today, Hawaii is making plans and looking forward to the reduction of this disease to a level where the care of patients will be in isolation units of general hospitals or in tuberculosis hospitals.

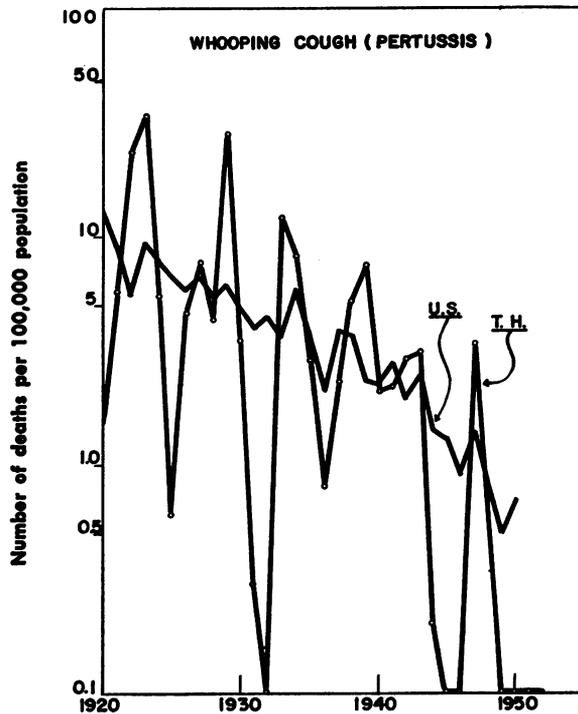
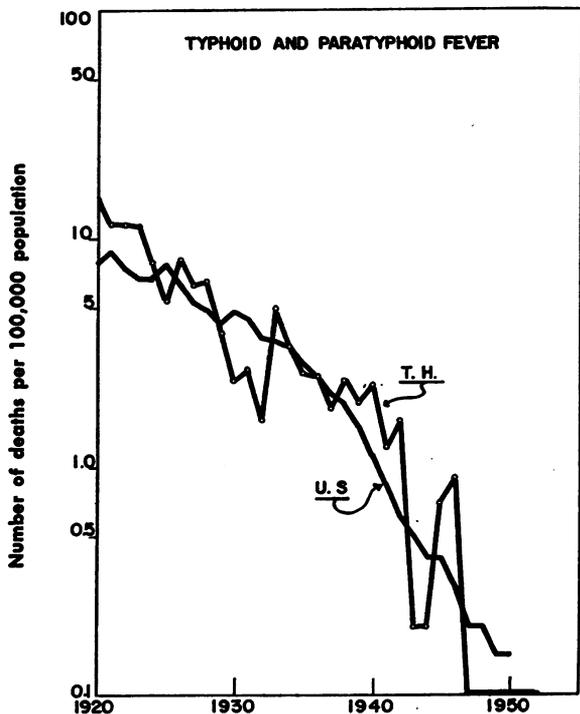
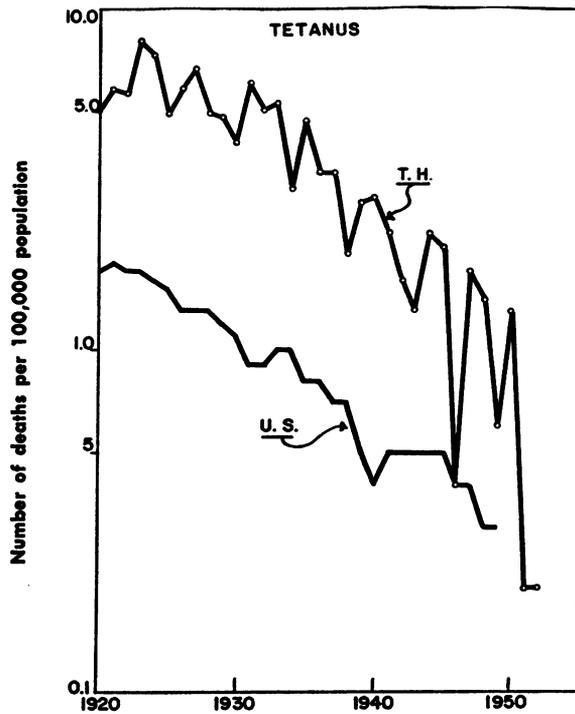
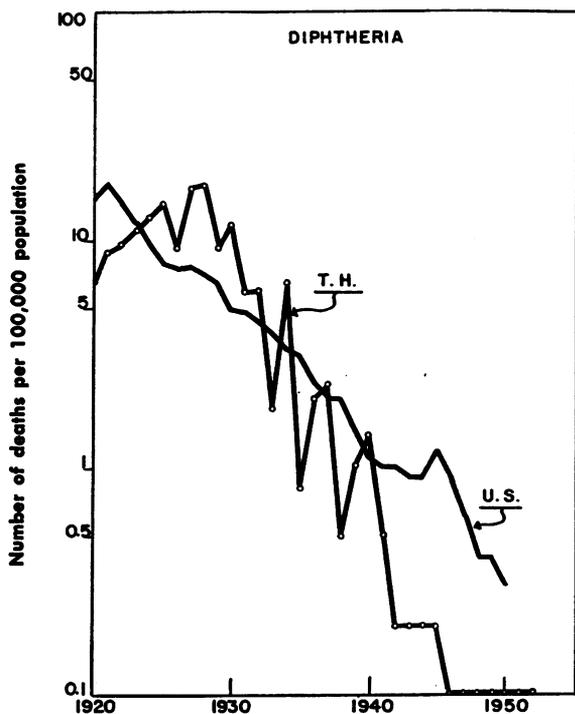
In 1868, "traveling" government physicians were employed on a part-time basis to care for the indigent and medically indigent. Today,

this same system of traveling government physicians is used in 40 rural districts to provide health and medical services in every area of the Territory.

In 1899, bubonic plague made its appearance in all the major ports of the Territory. Today, with assistance from the Public Health Service of the United States, plague and murine typhus fever have been controlled through vigilant rodent control measures. Rodent plague continues to be endemic in small areas on the Islands of Maui and Hawaii in a native field rat. Hawaii has had an extensive program for a long time to bring this problem under control. Today, studies are being made to determine to what extent this program can be reduced and still offer adequate protection to the public health.

The first sanitarian was appointed in 1884. Today, the ratio of general sanitarians to population is 1 in 11,000 persons. The first public health nurse in the Territory was appointed in 1906. A generalized and cooperative program between private and official

Figure 2. Charts comparing death rates from diphtheria, tetanus, typhoid and paratyphoid fever, and pertussis in the Territory of Hawaii with the continental United States.



agencies was introduced in Honolulu in 1929. Today, the ratio of public health nurses to population is 1 in 6,500.

Public health measures over the century were devoted to problems of environmental sanitation as well as to the prevention and control of contagious diseases. Quarantine was a simple problem with seagoing ships. Today, travel of civilians and military personnel by large ships and airplanes requires constant vigilance and coordination by a well-trained and well-organized health department.

Health Department Organization

The Hawaii Board of Health consists today of 11 members who are appointed by the Governor and who represent all islands in the Territory. The president of the board is executive officer of the Territorial department of health. At least 2 of the 11 board members must be physicians and at least 1 must be a dentist. The attorney general of the Territory is an ex officio member. The board is required to meet at least once a month.

According to Territorial law, minimum qualifications for the president of the board require that he has been or is eligible to be certified by the American Board of Preventive Medicine and Public Health, Inc.; or that he is licensed to practice as a doctor of medicine or osteopathy in the Territory and has successfully completed at least 1 year of graduate study leading to a degree in public health, and has had during the 10 years just preceding his consideration for appointment at least 6 years of practical experience in public health work, including supervision or administration of such work in communities of not less than 50,000 population, or as a commissioned medical officer in the Public Health Service of the United States.

There are 640 employees in the health department, which is administratively divided into 7 divisions, as illustrated in the 1953 organization chart. A territorywide civil service system applies to all employees except the executive officer and his assistant. A Territorial retirement system and workmen's compensation coverage are provided for all.

The program of the department is territory-

wide in scope. Appropriations serve all cities and counties. The county governments do not provide funds for health purposes since their work is limited to ambulance and first aid services and care for the convalescent and chronically ill. All employees and all programs are administered as one organization, with district units covering tricounty areas. The staff of the health department conducts the public health program for the City and County of Honolulu, where approximately 70 percent of the population resides, as well as serving as consultants on a territorywide basis. Of the department's annual budget of \$4.5 million, \$1 million is earmarked for the Hansen's disease program, \$1.1 million for medical care of the indigent and medically indigent, and \$500,000 are grant-in-aid Federal funds. Thus, about \$2.5 million is devoted to other specific public health programs.

Some Other Achievements

Hansen's disease—then referred to as leprosy—was first reported in 1857. In 1865, the legislature passed legislation requiring compulsory segregation of patients with the disease. In 1866, the Kalaupapa Settlement on Molokai had 151 patients, and in 1890 the number of patients increased to 1,180. Today, there are about 251 active cases, 157 at Kalaupapa, and 94 at Hale Mohalu. The former is well known, and the latter can be reached by a 15-minute automobile ride from the center of Honolulu.

In Hawaii, Hansen's disease is treated as a communicable disease and patients are given complete care. Work and recreational programs, vocational training, adult and childhood education, rehabilitation services, corrective surgery, outpatient and other services are all part of the total program administered by the division of Hansen's disease. Public and professional education is an important part of the program.

Public medical care for the indigent and the medically indigent is administered by the division of hospitals and medical care. All public welfare clients receive hospital and medical care automatically. County social workers designate all medically indigent. The entire program is integrated with existing programs. The program is closely coordinated with local county

government services in hospital and medical care.

While many traditional public health activities are being continued, new activities have been stressed in mental health, nutrition, public health dentistry, chronic disease, and rehabilitation services. Medical and hospital resources are comparable to most States: The ratio of physicians to population is about 1 in 1,000 and dentists, 1 in 1,400. The ratio of general hospital beds is 4.5 per 1,000 population and of tuberculosis beds, 16 per annual death.

Hawaii's physicians and dentists are trained in mainland professional schools and obtain their specialized training and experience at accredited centers. The medical and dental societies are active in promoting good health standards in the Territory.

Grants have been made to the health department for demonstration programs, in cooperation with other agencies, for adequate care of premature infants, rheumatic fever, cerebral palsy, as well as fetal waste studies, X-ray surveys, and research in tuberculosis statistics. A committee is now studying the scope of nonfatal home accidents among children and adults. Special studies are also being made of mental hygiene services, chronic illness, rehabilitation, alcoholism, and dental health by special committees of health agencies in the community health council. Much still needs to be done in heart disease, cancer, diabetes, and dental health control.

The difficulty in recruiting trained and qualified personnel is constantly present. Qualified health workers are reluctant to leave the mainland and to bear the expense of bringing their families to Hawaii at salaries not higher—in fact, often lower—than those paid on the mainland. Only the lure of the beautiful islands and a wonderful climate have aided the recruitment program. The cost of travel prohibits staff members from attending courses or conferences that are so necessary to keep them informed and stimulated by the changing concepts and advances in public health. However, the department does encourage staff attendance at conferences when funds are available, and it helps obtain financial assistance for specialized training.

Progress Through Teamwork

The voluntary health agencies, the hospitals, the Oahu Health Council, the Honolulu Chamber of Commerce, and the Shippers' Wharf Committee are strong, effective organizations that complement the public agencies' efforts in public health programs (2). This teamwork has been one of the most important factors for Hawaii's effective, well-rounded, and comprehensive health program.

Hawaii's experiences in integrating a civilian health program under martial law during World War II did much to advance the control of disease. Mobilization of military personnel and military order made it possible for health workers to demonstrate what could be done in the prevention and control of disease when sufficient funds, personnel, and police power were applied together.

In international health, Hawaii will continue to offer field studies for workers from Asia and the Pacific area. We expect to maintain a high standard of health services for our people and for our visitors. We are making unique accomplishments in the control of communicable disease by compulsory immunization requirements; in Hansen's disease, tuberculosis, maternal and child health, and health services for civilian defense. We look forward to making progress in the chronic diseases, rehabilitation of the handicapped, medical care and hospitalization services, accident prevention, and mental health. We will seek continued support of voluntary health agencies in aiding health protection and promotion.

After making three surveys (2-4) of public health activities in Hawaii (in 1929, 1935, and 1950), Dr. Ira V. Hiscock includes this statement in his 1950 report:

"This study disclosed marked progress in the development of public health organization and services and dramatic results from these programs during the past 20 years. Hawaii is blessed with many natural resources which enrich the life of her people; but the modern comforts and scientific benefits so abundantly provided are the results of vision, energy, and careful planning of community leaders. The continued achievements in the promotion of

health and the reduction of preventable diseases indicate foresight, judgment, loyalty, and skill, with human benefits and significance comparable to the most advanced communities and States on the mainland. At the same time a generally apparent attitude of constructive self-criticism, coupled with the application of searching appraisal methods, gives promise of continuing advances in the health program of Hawaii in line with new scientific advances and tested procedures."

REFERENCES

- (1) Ackland, R.: A century of public health in Hawaii. Honolulu, Office of Health Education, Department of Health, Territory of Hawaii, 1949.
- (2) Hiscock, I. V.: Public health in Hawaii, 1950. *Hawaii M. J.* 10: 99-103 (1950).
- (3) Hiscock, I. V.: A survey of health and welfare activities in Honolulu, Hawaii, including official and voluntary agencies, under the auspices of the United Welfare Fund, Department of Public Health, Yale School of Medicine, for the Committee on Administrative Practice, American Public Health Association. New Haven (?), 1929.
- (4) Hiscock, I. V.: A survey of public health activities in Honolulu, Hawaii, including official and voluntary agencies, under the auspices of the Chamber of Commerce of Honolulu and a brief survey of the major health problems of the Territory, made with the aid of the Kauai, Maui, and Hilo Chambers of Commerce, with the cooperation of the Committee on Administrative Practice, American Public Health Association. New Haven (?), 1935.

Dedication of the Sanitary Engineering Center

The Robert A. Taft Sanitary Engineering Center of the Public Health Service in Cincinnati, Ohio, was formally opened with a 2-day program on April 8 and 9, 1954. The new \$4 million building was dedicated on April 8 by Oveta Culp Hobby, Secretary of Health, Education, and Welfare. Guests at the dedication ceremony were introduced by Leonard A. Scheele, Surgeon General of the Public Health Service.

A scientific symposium on the control of the environment for the health of man was held on the second day of the program. Participating were Dr. Oram C. Woolpert, director of the Ohio State Research Foundation; Dr. Max Lauffer, head of the department of biophysics, University of Pittsburgh; Dr. Gordon M. Fair, professor of sanitary engineering, Harvard University; and Dr. Herman E. Hilleboe, commissioner of health of New York and president-elect of the American Public Health Association. Vernon G. MacKenzie, officer in charge of the Sanitary Engineering Center, was moderator of the symposium, and Mark D. Hollis, chief sanitary engineering officer of the Public Health Service, made the concluding remarks.

Dr. Abel Wolman, professor of sanitary engineering, Johns Hopkins University, spoke at the banquet held after the dedication ceremony. He discussed the significance of the new building and its research program, not only to the United States but to international efforts to raise health standards.

Pictures and a description of the new building and the program of the Center are scheduled for publication in the May issue of *Public Health Reports*.